

CLAIMS

What is claimed is:

1. A communication system, comprising:
 - 5 a portable radio that selectively transmits radio signals;
 - a first vehicular repeater system, comprising:
 - a first vehicular repeater adaptable to receive radio signals transmitted by the portable radio;
 - a first mobile radio, coupled to the first vehicular repeater, and adaptable to
 - 10 retransmit signals received by the first vehicular repeater;
 - wherein the first vehicular repeater has priority repeater status that signifies primary responsibility for repeating the radio signals transmitted by the portable radio, and wherein the first vehicular repeater is capable of transmitting a priority signal to indicate that it is to remain in priority repeater status;
 - 15 a second vehicular repeater system, comprising:
 - a second vehicular repeater;
 - a second mobile radio, coupled to the second vehicular repeater, and responsive to retransmit signals received by the second vehicular repeater; and
 - wherein the second vehicular repeater system transmits a notification signal when
 - 20 activated and monitors to receive the priority signal by the first vehicular repeater.
2. The communication system of claim 1, wherein the priority radio signal is a tone signal.
- 25 3. The communications system of claim 2, wherein the tone is transmitted over a voice channel.
4. The communications system of claim 1, wherein the priority radio signal is a digital signal.

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5. The communication system of claim 1, wherein the notification signal is a tone signal.

6. The communication system of claim 1, wherein the notification signal is a digital signal.

7. The communication system of claim 5, wherein the tone is transmitted over a voice channel.

8. The communications system of claim 1, wherein the second vehicular repeater system includes at least one counter for working with a receiver to switch between a priority and idle state based upon detection of the priority signal.

9. The communications system of claim 7, wherein the at one least counter is first initialized to act in the priority state and can then be incremented or decremented to active in the idle state.

10. The communications system as in claim 8, wherein a value of zero by the at least one counter is indicative of a priority state and a value of one by the at least one counter is indicative of an idle state.

11. A method for allowing a first vehicular repeater unit to maintain priority repeater status in a multi-unit vehicular repeater system comprising the steps of:
activating a first vehicular repeater system at a predetermined location;
activating a second vehicular repeater system at substantially the same predetermined location;
transmitting a notification signal by the second vehicular repeater system indicating presence at the predetermined location;
initiating normal repeater activity by the second vehicular repeater system;

receiving a priority signal at the second vehicular repeater system sent by the first vehicular repeater system; and

switching the second vehicular repeater system into an idle state based on receipt of the priority signal.

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12. A method as in claim 11, wherein the step of transmitting a notification signal further includes the step of:

initializing a counter in the second vehicular repeater to a priority state.

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13. A method as in claim 11, wherein the step of switching into an idle state includes the step of:

incrementing a counter in the second vehicular repeater from a priority state to an idle state in the second vehicular repeater in response to receipt of the priority signal.

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14. A method as in claim 13, wherein the counter set to zero is indicative of a priority state and the counter set to one is indicative of an idle state.

15. A method as in claim 11, wherein the notification signal is an analog tone signal.

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16. A method as in claim 11, wherein the notification signal is a digital signal.

17. A method as in claim 11, wherein the priority signal is an analog tone signal.

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18. A method as in claim 11, wherein the priority signal is a digital signal.

19. A method for maintaining a first vehicular repeater system as a priority repeater upon the arrival of at least one additional vehicular repeater in the same operational area comprising the steps of:

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activating the at least one additional vehicular repeater upon arrival at an operational area;

generating a radio frequency (RF) notification signal tone to other vehicular repeaters already in a priority state at the operational area;

5 setting at least one counter in the at least one additional vehicular repeater to an active state;

starting normal operational activities of the at least one additional repeater;

monitoring for an RF priority signal by the first vehicular repeater system; and
switching the at least one counter to an idle state upon receipt of an RF priority signal
10 from the first vehicular repeater.

20. A method for maintaining a first vehicular repeater system as a priority repeater as in claim 19, wherein the at least one additional vehicular repeater remains in a priority state if no RF priority signal is received.

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21. A method for maintaining a first vehicular repeater system as a priority repeater as in claim 19, wherein the at least one counter is set to zero in a priority state and the at least one counter is set to one in an idle state.

20 22. A method for maintaining a first vehicular repeater system as a priority repeater as in claim 19, wherein the notification signal tone and priority signal tone are analog signals.

23. A method for maintaining a first vehicular repeater system as a priority
25 repeater as in claim 19, wherein the notification signal tone and priority signal tone are digital packet signals.